

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

HAYSTACK IP LLC,

Plaintiff,

v.

SK HYNIX INC. and SK HYNIX  
AMERICA INC.

Defendants.

Case No. 6:20-cv-00368

**COMPLAINT FOR PATENT  
INFRINGEMENT**

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Haystack IP LLC (“Haystack” or “Plaintiff”), by way of this Complaint against Defendants SK Hynix Inc.. (“SK Hynix-Korea”) and SK Hynix America Inc. (“SK Hynix-America”) (collectively “SK Hynix” or “Defendants”), alleges as follows:

**PARTIES**

1. Plaintiff Haystack IP LLC is a limited liability company organized and existing under the laws of the State of Texas, having its principal place of business at 17330 Preston Road, Suite 200D, Dallas, Texas 75252.

2. On information and belief, Defendant SK Hynix-Korea is a corporation organized and existing under the laws of the Republic of Korea having a principal place of business at 2091, Gyeongchung-daero, Bubal-eup, Icheon-si, Gyeonggi-do, 17336, Korea. On information and belief, SK Hynix Inc. is the worldwide parent corporation for Defendant SK Hynix America Inc., and is responsible, either directly or indirectly through subsidiaries, for its infringing activities.

3. On information and belief, Defendant SK Hynix-America is a wholly-owned subsidiary of SK Hynix-Korea. On information and belief, SK Hynix-America is a corporation organized and existing under the laws of California, having a principal place of business at 3101 North 1st Street, San Jose, CA 95134, United States. On information and belief, Defendant SK Hynix-America is a wholly owned subsidiary of SK Hynix-Korea and is a United States operating company for SK Hynix-Korea. On information and belief, SK Hynix-America maintains a registered agent for service of process within this District, The Prentice-Hall Corporation System, 211 E. 7th Street, Suite 620, Austin, TX 78701

#### **JURISDICTION AND VENUE**

4. This is an action under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*, for infringement by SK Hynix of claims of U.S. Patent No. 6,642,554 (“the ’554 Patent”).

5. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. SK Hynix-Korea is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) SK Hynix-Korea has committed and continues to commit acts of patent infringement in the State of Texas, including by making, using, offering to sell, selling, and/or importing the accused products into Texas; (ii) SK Hynix-Korea purposefully supplies and directs the accused products for storage, warehousing, and sales by distributors and resellers in the State of Texas; and (iii) SK Hynix-Korea delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the State of Texas. In addition, or in the alternative, this

Court has personal jurisdiction over SK Hynix-Korea pursuant to Fed. R. Civ. P. 4(k)(2).

7. SK Hynix-America is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) SK Hynix-America has committed and continues to commit acts of patent infringement in the State of Texas, including by making, using, offering to sell, selling, and/or importing the accused products into Texas; (ii) SK Hynix-America purposefully supplies and directs the accused products for storage, warehousing, and sales by distributors and resellers in the State of Texas; (iii) SK Hynix-America delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the State of Texas; (iv) derives substantial revenue from its activities in this District; and (v) has purposefully established substantial, systematic and continuous contacts with this District such that it should reasonably expect to be haled into court in this District.

8. Venue is proper as to SK Hynix-Korea in this District under 28 U.S.C. § 1391(c) because, *inter alia*, SK Hynix-Korea is a foreign corporation.

9. Venue is proper as to SK Hynix-America in this District under 28 U.S.C. § 1400(b) because, *inter alia*, on information and belief, SK Hynix-America has committed acts of infringement in the District and/or has contributed to or induced acts of patent infringement by others in this District, and has a regular and established place of business within the District. For example, on information and belief, SK Hynix-America has offices at 4201 W Parmer Ln #280, Austin, TX 78727

#### **THE '554 PATENT**

10. U.S. Patent No. 6,642,554 is entitled “Memory Module Structure,” and was issued on November 4, 2003. A true and correct copy of the '554 Patent is attached as

Exhibit A.

11. The '554 Patent was filed on November 21, 2001 as U.S. Patent Application No. 09/996,675.

12. Haystack is the owner of all rights, title, and interest in and to the '554 Patent, with the full and exclusive right to bring suit to enforce the '554 Patent, including the right to recover for past infringement.

13. The '554 Patent is valid and enforceable under United States Patent Laws.

14. The '554 Patent recognized several problems with existing conventional memory module which arranged a plurality of dynamic random access memories on a substrate. Exhibit A at 1:11-14. For memory modules, the size of the substate is limited by the specification of the locking device. Exhibit A at 1:21-22. For a dynamic random access memory packaged by a conventional TSOP (thin small outline package), the volume of the package is relatively large and thus, it was impossible to arrange plural dynamic random access memories on the substrate to produce. Exhibit A at 1:23-28

15. Additionally, although if the memory is packaged by way of a chip scale package (CSP), a package having a smaller size can be obtained, if eight memories are intended to be arranged on the substrate, the memory module occupies most of the space of the substrate. Exhibit A at 1:30-34. Thus, it is not so easy to layout the wires on the substrate and to prevent the memories from contacting the notches as the engagement between the locking device and the notches would be adversely influenced. Exhibit A at 1:35-38.

16. To address one or more shortcomings of existing memory modules, the '554 Patent discloses, *inter alia*, a memory module structure capable of efficiently arranging

plural packaged memories on the substrate having a certain size without adversely influencing the wire layout on the substrate, thus increasing the capacity of the memory module.

**COUNT I: INFRINGEMENT OF U.S. PATENT NO. 6,642,554**

17. Haystack incorporates by reference and re-alleges paragraphs 10-16 of this Complaint as if fully set forth herein.

18. SK Hynix has infringed and is infringing, either literally or under the doctrine of equivalents, the '554 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, memory module products wherein some memories of the plurality of memories are transversely mounted on the substrate, and the other memories of the plurality of memories are longitudinally mounted on the substrate (e.g. SK Hynix HMA84GR7CJR4N-VK 32GB DDR4 Memory Module; HMABAGL7A4R4N-UL 128GB; HYNIX HMA42GR7AFR4N-UH 16GB; HMT42GR7AFR4A-H9 16GB) (collectively referred to herein as the “Accused Products”).

19. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 1 of the '554 Patent in connection with the Accused Products. This description is based on publicly available information. Haystack reserves the right to modify this description, including, for example, on the basis of information about the Accused '554 Products that it obtains during discovery.

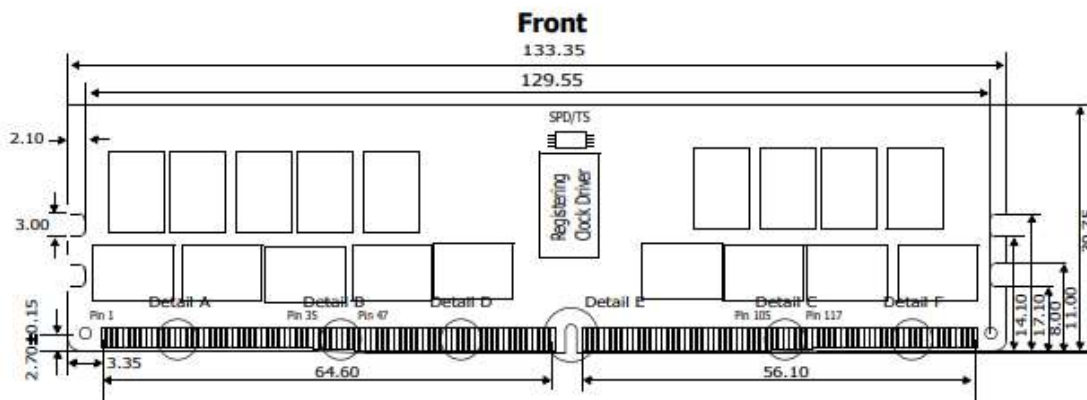
***1(a): A memory module structure for being assembled on a locking device, the memory module comprising:***—SK Hynix makes, uses, sells, and/or offers to sell a

memory module structure in accordance with Claim 1.

For instance, the Accused Products are memory module structure for being assembled on a locking device.



#### 4Gx72 - HMA84GR7CJR4N



<https://www.skhynix.com/products.view.do?vseq=3229&cseq=75>

*1(b): a substrate having certain long sides and short sides;*—SK Hynix makes, uses, sells, and/or offers to sell a memory module structure having a substrate having certain long sides and short sides.



*1(c): notches being formed on the short sides for being secured by the locking device; and;*—SK Hynix makes, uses, sells, and/or offers to sell a memory module structure having notches formed on the short sides and the notches are operable to be secured by a locking device.



*1(d): a plurality of memories, each of which having a suitable length and width;*— SK Hynix makes, uses, sells, and/or offers to sell a memory module structure that includes a plurality of memories.





## Description

The H5AN8G4NAFR-xxC, H5AN8G8NAFR-xxC and H5AN8G6NAFR-xxC are a 8Gb CMOS Double Data Rate IV (DDR4) Synchronous DRAM, ideally suited for the main memory applications which requires large memory density and high bandwidth. SK hynix 8Gb DDR4 SDRAMs offer fully synchronous operations referenced to both rising and falling edges of the clock. While all addresses and control inputs are latched on the rising edges of the CK (falling edges of the CK), Data, Data strobes and Write data masks inputs are sampled on both rising and falling edges of it. The data paths are internally pipelined and 8-bit prefetched to achieve very high bandwidth.

<https://www.skhynix.com/product/filedata/fileDownload.do?seq=7684>

For instance, the Accused Products includes a plurality of memory chips as shown

*1(e): wherein some memories of the plurality of memories are transversely mounted on the substrate with respect to the substrate, and the other memories of the plurality of memories are longitudinally mounted on the substrate with respect to the substrate.,—SK Hynix makes, uses, sells, and/or offers to sell a memory module structure wherein some of the memories are transversely mounted on the substrate, and the other memories are longitudinally mounted on the substrate.*



A plurality of the memories of the Accused Instrumentality are mounted longitudinally (e.g. parallel to the short sides)



20. At least as early as the filing and/or service of this Complaint, SK Hynix's infringement of the '554 Patent was and continues to be willful and deliberate, entitling Haystack to enhanced damages.

21. Additional allegations regarding SK Hynix's knowledge of the '554 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

22. SK Hynix's infringement of the '554 Patent is exceptional and entitles Haystack to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

23. Haystack is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '554 Patent.

24. Haystack is entitled to recover from SK Hynix all damages that Haystack

has sustained as a result of SK Hynix's infringement of the '554 Patent, including, without limitation, a reasonable royalty.

**PRAYER FOR RELIEF**

WHEREFORE, Haystack respectfully requests:

A. That Judgment be entered that SK Hynix has infringed at least one or more claims of the '554 Patent, directly and/or indirectly, literally and/or under the doctrine of equivalents;

B. An award of damages sufficient to compensate Haystack for SK Hynix's infringement under 35 U.S.C. § 284, including an enhancement of damages on account of SK Hynix's willful infringement;

C. That the case be found exceptional under 35 U.S.C. § 285 and that Haystack be awarded its reasonable attorneys' fees;

D. Costs and expenses in this action;

E. An award of prejudgment and post-judgment interest; and

F. Such other and further relief as the Court may deem just and proper.

**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Haystack respectfully demands a trial by jury on all issues triable by jury.

Respectfully submitted,

Dated: May 7, 2020

/s/ Raymond W. Mort, III  
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